What is claimed is:

1. A wavelet-based encoding method that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a plurality of frequency ranges along the frequency axis is compressed by performing scalar quantization with step numbers varied from one frequency range to another.

2. A wavelet-based encoding method that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein, as long as an absolute value of data is within a threshold value, scalar quantization is performed with an increasingly wide step width according as the absolute value of data increases and, when the absolute value of data exceeds the threshold value, no quantization is performed, so that data in a particular frequency range along the frequency axis is compressed.

3. A wavelet-based encoding method that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization using a code book selected from among a plurality of code books according to activity of the input data.

4. A wavelet-based encoding method as claimed in claim 3,

wherein, for each of local regions each composed of a plurality of pieces of the input data, a local average value is calculated by calculating an average value of those pieces of data, then local activity is calculated by calculating an average of squares of deviations of those pieces of data from the local average, and then the activity of the input data is calculated by calculating an average of the local activity of all of the local regions.

5. A wavelet-based encoding method that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization on quantization units varied according to quantization errors resulting from vector quantization.

6. A wavelet-based encoding method that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the

frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing either vector quantization or scalar quantization according to quantization errors resulting from vector quantization.

7. A wavelet-based encoding device that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein the frequency range dividing filter is composed of a plurality of non-recursive digital filters and performs a multiplication operation by exploiting a fact that a value is approximated by adding or subtracting a value obtained by shifting digits of another value.

8. A wavelet-based encoding device that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a plurality of frequency ranges along the frequency axis is compressed by performing scalar quantization with step numbers varied from one frequency range to another.

9. A wavelet-based encoding device that converts input data, distributed

along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein, as long as an absolute value of data is within a threshold value, scalar quantization is performed with an increasingly wide step width according as the absolute value of data increases and, when the absolute value of data exceeds the threshold value, no quantization is performed, so that data in a particular frequency range along the frequency axis is compressed.

10. A wavelet-based encoding device that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization using a code book selected from among a plurality of code books according to activity of the input data.

11. A wavelet-based encoding device as claimed in claim 10,

wherein, for each of local regions each composed of a plurality of pieces of the input data, a local average value is calculated by calculating an average value of those pieces of data, then local activity is calculated by calculating an average of squares of deviations of those pieces of data from the local average, and then the activity of the input data is calculated by calculating an average of the local

activity of all of the local regions.

12. A wavelet-based encoding device that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization on quantization units varied according to quantization errors resulting from vector quantization.

13. A wavelet-based encoding device that converts input data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and that compresses the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing either vector quantization or scalar quantization according to quantization errors resulting from vector quantization.

14. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a plurality of frequency ranges along the frequency axis is compressed by performing scalar quantization with step numbers varied from one frequency range to another.

15. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein, as long as an absolute value of data is within a threshold value, scalar quantization is performed with an increasingly wide step width according as the absolute value of data increases and, when the absolute value of data exceeds the threshold value, no quantization is performed, so that data in a particular frequency range along the frequency axis is compressed.

16. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization using a code book selected from among a plurality of code books according to activity of the image data.

17. An image processing apparatus as claimed in claim 16,

wherein, for each of local regions each composed of a plurality of pieces of the image data, a local average value is calculated by calculating an average value of those pieces of data, then local activity is calculated by calculating an average of squares of deviations of those pieces of data from the local average, and then the activity of the image data is calculated by calculating an average of the local activity of all of the local regions.

18. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing vector quantization on quantization units varied according to quantization errors resulting from vector quantization.

19. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data in a particular frequency range along the frequency axis is compressed by performing either vector quantization or scalar quantization according to quantization errors resulting from vector quantization.

20. An image processing apparatus for recording or communicating image data by converting the image data, distributed along a time axis, into data distributed along a frequency axis by using a frequency range dividing filter and then compressing the data distributed along the frequency axis by using methods corresponding to individual frequency ranges,

wherein data compression is achieved by performing predictive coding for a low frequency range, performing scalar quantization for a plurality of frequency ranges between the low frequency range and a high frequency range with step numbers varied from one frequency range to another, and performing vector quantization for the high frequency range using one among a plurality of code books according to activity of the image data.